

Application Serial No. 09/344,863

REMARKS

Applicants have cancelled claims 1, 17, 18, 19, 21 and 23, and have amended most of the remaining dependent claims to depend from new independent claim 27. Applicants have amended claim 24 to include the recitations of a fuser component, having a heating member associated with the fuser component, wherein the fuser component comprises a coating consisting essentially of a thiophene-based material. Applicants have added new claim 27, directed to a fuser member having heat associated with the fuser member. Entry of the above amendments is respectfully requested.

Review and reconsideration on the merits are requested.

Claims 1, 9-10, 17-19 and 21 have been rejected under 35 USC §103(a) as obvious over Mort, et al. In response, Applicants traverse the rejection.

Mort, et al. teaches various members of a xerographic machine, which can contain a composition including a charge-transporting material and a dopant capable of accepting at least one electron from at least one charge-transporting moiety in the material. The charge-transporting compound can comprise oligothiophene-containing tetramers or high-order polymers. The thiophene-containing polymers are described at columns 4-7 of the reference. The reference also teaches other polymers that can be used in the charge-transporting material include inert or insulative butadiene-based elastomers (Example 3 at column 17). Claim 1 of the reference sets forth five polymers that can be used in the charge-transporting material for the coating composition. Mort et al. relates to coated transport members and an intermediate transfer belt.

Mort et al. does not teach or suggest a fuser member having a thiophene layer.

Mort, et al. also does not teach or suggest the claimed substrate. Specifically, Mort, et al. does not teach or suggest a substrate comprising a polymer selected from the group consisting of fluoropolymers, chloropolymers, silicone rubbers, polyarylenes, ethylene diene propene monomer, nitrile rubbers and mixtures thereof. Instead, Mort, et al. teaches that the butadiene can be used as an outer coating. Applicants submit that one of ordinary skill in the art would not have been motivated to take a material

Application Serial No. 09/344,863

taught as used as an outer coating, modify its chemistry, and use it as a substrate layer as claimed.

Because Mort, et al. does not teach or suggest use of a thiophene layer in combination with a fuser member, and because Mort, et al. does not teach any of the polymers set forth in the present claims, as a substrate material, Applicants submit that the present claims are not rendered obvious in view of Mort, et al.

Accordingly, Applicants request withdrawal of the rejection of claims 1, 9-10, 17-19 and 21 under 35 USC §103(a) as obvious over Mort, et al.

Claims 4, 11-13 and 24 have been rejected under 35 USC §103(a) as obvious over Mort, et al. as applied to claims 1, 9-10, 17-19 and 21 above, and further in view of Mammino, et al. In response, Applicants traverse the rejection.

Mort, et al. has been discussed above.

Mammino, et al. does not teach or suggest the claimed fuser member in combination with a thiophene layer.

Further, Mammino, et al. teaches a single layer intermediate transfer member, wherein the layer comprises a fluorocarbon elastomer. It is clear from the teachings of Mammino, et al. that the fluorocarbon elastomer is meant as a single layer intermediate transfer member. The reference does not teach or suggest any outer coating. At column 5, the term "single layer fluorocarbon elastomer" is defined as not including a backing by a substrate. The single layer may include zones within the fluorocarbon elastomer. However, there is no teaching or suggestion of an outer coating on the fluorocarbon elastomer single layer.

Therefore, because Mort, et al. teaches an outer coating comprising a thiophene-containing polymer or a butadiene-containing polymer, but does not teach or suggest the claimed substrate materials, and further because Mammino, et al. teaches a single layer fluorocarbon elastomer intermediate transfer member without an outer layer, one of ordinary skill in the art would not have been motivated to combine the references. More specifically, one of ordinary skill in the art would not have been motivated to place the thiophene-material coating of Mort, et al. onto the fluorocarbon elastomer of Mammino, et al. when there is no teaching or suggestion to make this drastic change. There would have to have been some teaching or suggestion in the

Application Serial No. 09/344,863

references that the single layer intermediate transfer member could be modified by adding an outer layer. Instead, the entire teaching of Mammino, et al. is based on the fact that the fluorocarbon elastomer is a single layer. In addition, Mammino, et al. does not teach or suggest the claimed fuser member in combination with a thiophene layer.

In view of the above arguments, Applicants submit that the present claims are not rendered obvious in view of the cited combination. Accordingly, Applicants request withdrawal of the rejection of claims 4, 11-13 and 24 under 35 USC §103(a) as obvious over Mort, et al. as applied to claims 1, 9-10, 17-19 and 21 above, and further in view of Mammino, et al.

Claims 5-18 and 14-15 have been rejected under 35 USC §103(a) as obvious over Mort, et al. as applied to claims 1, 9, 17-19 and 21 above, and further in view of Jonas, et al. In response, Applicants traverse the rejection.

Mort, et al. has been discussed above. Applicants note that Mort, et al. does not teach or suggest the claimed substrate materials. In addition, Mort, et al. does not teach or suggest the claimed fuser member in combination with a thiophene layer. Instead, Mort, et al. teaches an intermediate transfer or transfer member in combination with a thiophene-containing polymer.

Jonas, et al. has been discussed in previous responses. Jonas, et al. teaches electrode substrates of glass or plastic films (e.g., polyester such as polyethylene terephthalate or polyethylene naphthalate, polycarbonate, polyacrylate, polysulphone, or polyimide).

Applicants submit that neither reference alone or in combination, teach the claimed substrate material. Both Jonas, et al. and Mort, et al. teach coatings using polythiophene. However, neither reference teaches or suggests the claimed substrate materials. Applicants point out that Mort, et al. teaches that butadiene can be used as an outer coating and not as a substrate layer (Example 3 and Claim 1).

In addition, neither reference teaches the claimed fuser member in combination with a thiophene material layer.

Because neither reference teaches or suggests the claimed substrate materials or the claimed fuser member in combination with a thiophene material layer, Applicants submit that the present claims are not rendered obvious in view of the cited

Application Serial No. 09/344,863

combination. Accordingly, Applicants request withdrawal of the rejection of claims 5-8 and 14-15 under 35 USC §103(a) as obvious over Mort, et al. as applied to claims 1, 9, 17-19 and 21 above, and further in view of Jonas, et al.

In view of the above arguments, Applicants submit that all claims should now be in condition for allowance. Early indication of allowability is respectfully requested.

No additional fee is believed to be required for this amendment. However, the undersigned Xerox Corporation Attorney hereby authorizes the charging of any necessary fees, other than the issue fee, to Xerox Corporation Deposit Account No. 24-0025. This also constitutes a request for any needed extension of time and authorization to charge all fees therefor to Xerox Corporation Deposit Account No. 24-0025.

Application Serial No. 09/344,863

In the event the Examiner considers personal contact advantageous to the disposition of this case, s/he is hereby authorized to call Applicant's Attorney, Annette L. Bade, at telephone number (310) 333-3682, El Segundo, California.

Respectfully submitted,



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Application Serial No. 09/344,863

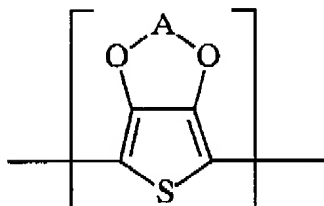
VERSION TO SHOW MARK-UP

IN THE CLAIMS:

Claim 1 has been cancelled.

4. (Amended) A xerographic fuser component [A xerographic component] as claimed in claim [1] 27, wherein said fluoropolymer is selected from the group consisting of a) copolymers of vinylidene fluoride, hexafluoropropylene and tetrafluoroethylene; b) terpolymers of vinylidene fluoride, hexafluoropropylene and tetrafluoroethylene; and c) and tetrapolymers of vinylidene fluoride, hexafluoropropylene and tetrafluoroethylene and a cure site monomer.

5. (Amended) A xerographic fuser component [A xerographic component] as claimed in claim [1] 27, wherein said thiophene-based material has the following formula I:



wherein A is an optionally substituted C₁-C₄ alkylene radical.

6. (Amended) A xerographic fuser component [A xerographic component] as claimed in claim 5, wherein said optionally substituted C₁-C₄ alkylene radical is selected from the group consisting of a methylene radical, alkyl-substituted methylene radical, 1,2-ethylene radical, 1,2-ethylene radical substituted by C₁-C₁₂-alkyl, 1,2-ethylene radical substituted by phenyl, and a 1,2-cyclohexylene radical.

Application Serial No. 09/344,863

7. (Amended) A xerographic fuser component [A xerographic component] as claimed in claim 6, wherein said thiophene-based material is a polyethylene dioxythiophene.

8. (Amended) A xerographic fuser component [A xerographic component] as claimed in claim 7, wherein said thiophene-based material is 3,4 polyethylenedioxythiophene.

9. (Amended) A xerographic fuser component [A xerographic component] as claimed in claim [1] 27, wherein said [xerographic] fuser component further comprises an intermediate layer positioned between said substrate and said thiophene-based material coating.

10. (Amended) A xerographic fuser component [A xerographic component] as claimed in claim 9, wherein said intermediate layer comprises a polymer.

11. (Amended) A xerographic fuser component [A xerographic component] as claimed in claim 10, wherein said polymer is selected from the group consisting of fluoropolymers, chloropolymers, silicone rubbers, polyimides, polyamides, polypropylenes, polyethylenes, polybutylenes, polyarylenes, acrylonitriles, polycarbonates, polysulfones, ethylene diene propene monomer, nitrile rubbers and mixtures thereof.

12. (Amended) A xerographic fuser component [A xerographic component] as claimed in claim [1] 27, wherein said fuser component further comprises an outer coating on said thiophene-based material coating.

13. (Amended) A xerographic fuser component [A xerographic component] as claimed in claim 12, wherein said outer coating comprises a polymer.

Application Serial No. 09/344,863

14. (Amended) A xerographic fuser component [A xerographic component] as claimed in claim 12, wherein said thiophene-based material coating is an adhesive.

15. (Amended) A xerographic fuser component [A xerographic component] as claimed in claim 14, wherein said adhesive further comprises polystyrene sulfonic acid.

Claims 17, 18 and 19 have been cancelled.

Claims 21 -23 have been cancelled.

24. (Thrice Amended) A xerographic fuser [belt] component comprising:

a) a substrate comprising a fluoropolymer selected from the group consisting of i) copolymers of vinylidene fluoride, hexafluoropropylene and tetrafluoroethylene; ii) terpolymers of vinylidene fluoride, hexafluoropropylene and tetrafluoroethylene; and iii) tetrapolymers of vinylidene fluoride, hexafluoropropylene, tetrafluoroethylene, and a cure site monomer; and thereon

b) a coating [comprising] consisting essentially of a thiophene-based material; and

c) a heating member associated with said fuser component.

25. (Amended) A xerographic fuser component as claimed in claim 24, wherein said thiophene-based material is 3,4 polyethylenedioxythiophene.

26. (Four Times Amended) An image forming apparatus for forming images on a recording medium comprising:

a charge-retentive surface to receive an electrostatic latent image thereon;

a biasable component capable of receiving an electrical bias for charging one of a xerographic component or copy substrate surface;

a development component to apply toner to said charge-retentive surface to develop said electrostatic latent image to form a developed image on said charge retentive surface;

Application Serial No. 09/344,863

a transfer component to transfer the developed image from said charge retentive surface to a copy substrate; and

a fuser component for fusing said developed image to a surface of said copy substrate, wherein [at least one of said biasable component, transfer component and] said fuser component [comprise] comprises:

a) a [belt] substrate comprising a polymer selected from the group consisting of fluoropolymers, chloropolymers, silicone rubbers, polyarylenes, ethylene diene propene monomer, nitrile rubbers and mixtures thereof; and thereon

b) a coating [comprising] consisting essentially of a thiophene-based material.

Claim 27 is new.